PROJECT NUMBER: 1620
PROJECT TITLE: Electrophysiological Studies
PROJECT LEADER: F. P. Gullotta
WRITTEN BY: C. S. Hayes
PERIOD COVERED: April, 1988

I. NASAL EVENT-RELATED POTENTIALS (NERPs)

A. Objective: To develop methods by which to objectively and reliably evaluate human responses to cigarettes, smoke constituents and tobacco flavorants.

B. Results:

1. Cognitive NERP Study

Problems continue to be encountered with the new odorant delivery system of the olfactometer delaying the onset of cognitive NERP experiments. The problems appear to be related to the new birhinal switching device. Upon stimulation, (i.e., switching of the airstreams), a pulse (i.e., change in airflow) is detectable in both of the olfactometer airstreams. There must be no detectable change in flow during the switching of airstreams in order to assure artifact-free event-related potential recordings. Additionally, odorant is being released into the airstream during the inter-stimulus-interval (ISI), further indicating a problem with the switching and/or plumbing of the olfactometer. When correctly operating, the olfactometer should release a controlled amount of odorant into a clean airstream and then rapidly be flushed out. To date, these problems are awaiting investigation by J. Washington. Until they are corrected, experiments employing the olfactometer cannot be conducted.

Optimal methods for quantifying cognitive NERPs continue to be explored. To date, it appears that RS1 is neither powerful nor fast enough to handle the extensive amount of data generated during a principal component analysis. The BMDP software appears promising, but it is also very slow and would require an overnight batching of the data to the Unix system. Other statistical/graphical software packages continue to be evaluated for their utility in conducting principal component analyses and other multivariate analyses.

C. Plans: Once the above problems with the olfactometer are corrected, plans are to conduct pilot experiments to: 1) test the operation of the new system and, 2) determine the optimal parameters for elicitiation of the late positivity of the NERP. Following the fulfillment of these objectives, cognitive discrimination experiments comparing natural and synthetic menthol will begin.

2000459552

Source: https://www.industrydocuments.ucsf.edu/docs/tgfm0000